

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 4-21 are now pending in this application. Claims 4-12 have been withdrawn from consideration.

Rejection under 35 U.S.C. § 112

Claims 13 and 20 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Applicant respectfully submits that the amendments to the claims render this rejection moot. Furthermore, Applicant respectfully disagrees with the Office's argument that the ozone would be destroyed before the ozone would perform a deodorizing step. Firstly, the Office does not explain how ozone would be destroyed. Secondly, Applicant notes that any odor substance in the vicinity of the ozone, such as the location where the ozone is generated, can react with the ozone and be deodorized. Reconsideration and withdrawal of this rejection is respectfully requested.

Rejections under 35 U.S.C. § 103

As a preliminary statement to the rejections set forth by the Office, the Office argues on page 4 of the Office Action that the level of ordinary skill in the art would be high. Applicant disagrees with this assertion regarding the level of ordinary skill in the art.

Claims 13-16, 18, 20, and 21 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,676,913 to Cirillo *et al.* (hereafter "Cirillo") in view of U.S. Patent No. 5,538,697 to Abe *et al.* (hereafter "Abe"), U.S. Pub. No. 2002/0016252 to Takahashi *et al.* (hereafter "Takahashi"), U.S. Pub. No. 5,142,864 to Dunne (hereafter "Dunne"), U.S. Patent No. 5,497,619 to Yamada *et al.* (hereafter "Yamada"), and Heck *et al.*, *The application of monoliths for gas phase catalytic reactions*, Chemical Engineering Journal 2001; 82: 149-156 (hereafter "Heck"). This rejection is respectfully traversed.

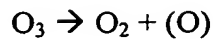
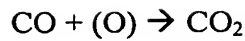
Claims 13-15, 18, 20, and 21 are also rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,221,520 to Cornwell (hereafter “Cornwell”) in view of U.S. Patent No. 5,538,697 to Abe *et al.* (hereafter “Abe”), U.S. Pub. No. 2002/0016252 to Takahashi *et al.* (hereafter “Takahashi”), U.S. Pub. No. 5,142,864 to Dunne (hereafter “Dunne”), U.S. Patent No. 5,497,619 to Yamada *et al.* (hereafter “Yamada”), and Heck *et al.*, *The application of monoliths for gas phase catalytic reactions*, Chemical Engineering Journal 2001; 82: 149-156 (hereafter “Heck”). This rejection is also respectfully traversed.

The Office notes on pages 5 and 9 of the Office Action that Cirillo and Cornwell do not disclose or suggest an ozone decomposing member that is in the form of a honeycomb structure or a three dimensional mesh structure, as recited in claims 13 and 20. Claims 14-16 and 18 depend from claim 1 and claim 21 depends from claim 20.

The Office argues that it would have been obvious to modify the teachings of Cirillo or Cornwell to provide such an ozone decomposing member because such a honeycomb structure or three dimensional mesh structure would have been known in the art. The Office cites the teachings of Abe, Takahashi, Dunne, Yamada, or Heck to support this taking of Official Notice.

However, it would not have been obvious to modify the teachings of Cirillo or Cornwell by the teachings of Abe, Takahashi, Dunne, Yamada, or Heck because one of ordinary skill in the art would not have looked to the teachings of these references when considering a structure for an ozone decomposing member. Abe, Takahashi, Dunne, Yamada, and Heck regard catalysts for exhaust gases. One of ordinary skill in the art would not consider the teachings of these references because they regard exhaust gases from a vehicle, not air flowing into a structure or vehicle, as in Cirillo and Cornwell. Thus, Abe, Takahashi, Dunne, Yamada, or Heck cannot provide support for the Office’s taking of Official Notice that a honeycomb structure or three dimensional mesh structure for an ozone decomposing member would have been known in the art.

Applicant further notes that the methods of claims 13 and 20 advantageously provide an ozone decomposing substance that includes an ozone decomposing substance that decomposes ozone to generate active oxygen (radical O) which has a life time of the order of 10^{-6} to 10^{-7} seconds, which is extremely short. The following formulas are to be considered in this situation:



To utilize the oxygen with carbon monoxide, it is advantageous to densely capture the carbon monoxide in an effective reaction distance to the active oxygen so that a reaction takes place within the effective life of the active oxygen. Thus, the active oxygen must react with the carbon monoxide during a time from the generation of the active oxygen to annihilation of the active oxygen so that the carbon monoxide may be oxidized. Because of this, it is necessary to densely capture carbon monoxide molecules in the extreme vicinity of the active oxygen generating area via ozone decomposition. As shown in the example of Figure 3 of the application, an oxidizing apparatus 10 can include a CO adsorbing area D that adsorbs carbon monoxide and is located in an ozone decomposing area C that includes an ozone decomposer 24 so that the oxidation of carbon monoxide via active oxygen can take place within the vicinity where active oxygen is generated and within the short effective life of the active oxygen.

For at least the reasons discussed above, reconsideration and withdrawal of these rejections is respectfully requested.

Claim 17 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Cirillo, Abe, Takahashi, Dunne, Yamada, and Heck, as applied to claim 14, and further in view of U.S. Patent No. 6,042,637 to Weinberg (hereafter “Weinberg”). This rejection is respectfully traversed. Weinberg fails to remedy the deficiencies of Cirillo, Abe, Takahashi, Dunne, Yamada, and Heck discussed above in regard to independent claim 13, from which claim 17 depends. Reconsideration and withdrawal of this rejection is respectfully requested.

Claim 19 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Cirillo, Abe, Takahashi, Dunne, Yamada, and Heck, as applied to claim 14, and further in view of U.S. Patent No. 4,661,468 to Lee *et al.* (hereafter “Lee”). This rejection is respectfully traversed. Lee fails to remedy the deficiencies of Cirillo, Abe, Takahashi, Dunne, Yamada, and Heck discussed above in regard to independent claim 13, from which claim 19 depends. Reconsideration and withdrawal of this rejection is respectfully requested.

Claim 16 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Cornwell, Abe, Takahashi, Dunne, Yamada, and Heck, as applied to claim 13, and further in view of Cirillo. This rejection is respectfully traversed. Cirillo fails to remedy the deficiencies of Cornwell, Abe, Takahashi, Dunne, Yamada, and Heck discussed above in regard to independent claim 13, from which claim 16 depends. Reconsideration and withdrawal of this rejection is respectfully requested.

Claim 17 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Cornwell, Abe, Takahashi, Dunne, Yamada, and Heck, as applied to claim 14, and further in view of Weinberg. This rejection is respectfully traversed. Weinberg fails to remedy the deficiencies of Cornwell, Abe, Takahashi, Dunne, Yamada, and Heck discussed above in regard to independent claim 13, from which claim 17 depends. Reconsideration and withdrawal of this rejection is respectfully requested.

Claim 19 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Cornwell, Abe, Takahashi, Dunne, Yamada, and Heck, as applied to claim 13, and further in view of Lee. This rejection is respectfully traversed. Lee fails to remedy the deficiencies of Cornwell, Abe, Takahashi, Dunne, Yamada, and Heck discussed above in regard to independent claim 13, from which claim 19 depends. Reconsideration and withdrawal of this rejection is respectfully requested.

CONCLUSION

Applicant submits that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.


The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are

needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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By 

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